

**PREQUALIFICATION PROCEDURES AND ACCEPTANCE CRITERIA FOR HEADED BAR
REINFORCEMENT ON ASTM A 706 REINFORCING STEEL**

- I. Manufacturer/Supplier provides
 - A. The model number/name of the product.
 - B. Brochures, shop drawings, and other technical information that indicates
 - 1. Dimensions
 - 2. Materials
 - C. Documentation of heat treatment or any special manufacturing process (i.e., forging the bar end).
 - D. Explanation of how bars are identified or marked.
 - E. Quality control procedures for materials and manufacturing process(es). As a minimum, the QC manual shall include the following:
 - 1. The pre-production procedures for the qualification of materials and equipment.
 - 2. The methods and frequencies for performing QC procedures during production.
 - 3. The calibration procedures and calibration frequency for all equipment.
 - 4. A system for the identification and tracking of all friction welds. The system shall have provisions for permanently identifying each weld and the parameters used to perform it.
 - 5. The welding procedure specification (WPS) for friction welded headed bar reinforcement.
 - 6. A system for marking headed bar reinforcement.
 - F. Test report from an independent testing lab verifying that the product meets Caltrans' Standard Specifications, Section 52, and ASTM A970 specifications.
 - G. Four headed rebar samples. For rebar sizes #9 and below, sample length must be 3 feet long; for rebar sizes #10 and above, sample length must be 6.0 feet.
 - H. Mill certificates for head material and rebar for each sample and rebar size.
- II. Caltrans will
 - A. Ensure all required documentation and samples are received.
 - B. Review the technical information the supplier provided.
 - C. Perform mechanical testing
 - 1. Cyclical test per Test Method CT 670
 - 2. Tensile test per Test Method CT 670
 - a. Tensile strength shall conform to the requirements specified in ASTM Designation: A 970/A 970M, Section 7 (minimum tensile strength of 80 ksi).
 - b. Rupture in the rebar, with visible necking, either
 - i. Outside the affected zone for integrally forged headed bar reinforcement
 - ii. At a minimum distance of one bar diameter away from the head to bar connection for friction welded headed bar reinforcement

*California Department of Transportation
Materials Engineering and Testing Services
Structural Materials Testing Branch*

(April 5, 2007)

- D. Upon evaluation of results from II.A to II.C above, issue either an acceptance letter or rejection letter.
- E. Update the Caltrans Headed Bar Reinforcement Pre-qualified Products list, if applicable.

For more information, you may contact the Structural Materials Testing Branch at (916) 227-7251.